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EXAMINER
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BOYER, CHARLES I

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/049,995  
Filing Date: February 20, 2002  
Appellant(s): SAITO ET AL.

John W. Bailey  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed November 14, 2007 appealing from the Office action mailed March 23, 2007.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

936,269	Nitta et al	9-1997
6,794,354	Mort et al	9-2004

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 1-7, 9-13, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta et al, EP 936,269.

Nitta et al teach a process for preparing high density detergent compositions (see abstract). An example of such a process adds sodium carbonate and sodium tripolyphosphate to a mixer, followed by alkylbenzene sulfonic acid such that the LAS is fully neutralized (note the absence of any aluminosilicate in this neutralization). The examiner maintains that this neutralization step is the same neutralizing step as in step A presently claimed. Though not explicitly stated by the reference, as all of the components presently claimed are present in this example, and the process of this example has reached the same point as that claimed, that is, a neutralized liquid acid precursor, it is reasonable to assume that coarse grains have begun to form. To restate, if coarse grains have formed for applicants' composition in present claim 1, and all components and process steps in the reference are identical, they must be forming in the composition of the reference as well.

At this point, an aqueous solution of acrylic acid-maleic acid copolymer (meets the liquid binder limitation of the claims) and 4.2% zeolite with a particle size of 4 microns is added to the neutralization mixture, yielding a final composition of free-flowing granules with a bulk density of 760 g/L, wherein the composition comprises 12% zeolite (page 13, example 1 and page 19, table 1). Note that this process includes

blowing a gas during the neutralization step (see page 23, table 5). Further note that substances generally employed in detergent compositions, such as aluminosilicates, may be added after the neutralization step and prior to the step of adding liquid components (page 8, paragraph 62). In this scenario, an aluminosilicate would be added after the neutralization, followed by binder, then followed by additional aluminosilicate, which is precisely what is presently claimed. A person of ordinary skill in the art then, based on the teachings of the reference, would find it obvious to prepare a granular detergent by the scenario set forth above, that is, first some powder, then binder, then more powder is added, with a reasonable expectation of successfully obtaining an effective detergent granule.

Claims 1-7, 9-13, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mort III et al, US 6,794,354.

Mort et al teach a continuous process for making a detergent composition (see abstract). This process begins with a zeolite-free neutralization step in a first mixer containing a liquid acid precursor and sodium carbonate as an alkaline inorganic material. The examiner maintains that this neutralization step is the same neutralizing step as in step A presently claimed.

The neutralizing step is followed by an intermediate step where optional liquid or particulate materials may be added, such as a zeolite free-flow aid. The "second" agglomeration step adds a liquid binder to the free-flowing powder obtained from the previous steps (col. 6, line 25-col. 7, line 35) and as much as 10% additional detergent

ingredients, such as aluminosilicates, which may be added as additional builders or coating agents, may be added in the second step (col. 13, lines 27-39). An example of such a process results in detergent agglomerates having a bulk density of 680 g/L and a particle size of 550 microns (col. 15, example 1).

Based on this teaching, the following scenario can be easily envisioned, whereby after the neutralization step, a zeolite free flow aid is added in an intermediate step, after which a binder, followed by additional zeolite, is added in the second step. Such a scenario is precisely the method claimed by applicants.

The examiner acknowledges that this scenario is merely one of many that could be envisioned by a reading of the reference. However, it is precisely this latitude with regard to process steps that the examiner notes time and again in the prior art and leads the examiner to the conclusion that there are many different ways to formulate an agglomerate and the person of skill in the art is aware that at times it may be advantageous to add all of the binder or particulate in a single batch, and at times it is better to add the ingredients in alternating steps, as presently claimed, depending on the needs of the formulator. Such processes are known in the art, as evidenced by the reference, and do not represent an unobvious difference over the prior art.

#### **(10) Response to Argument**

At the outset, the examiner maintains that all detergent agglomerates are formed in essentially the same way, that is, some powder and liquid binder are added to a mixer, and upon mixing, the powder sticks to itself and forms larger and larger particles

until the particles reach the desired size of the formulator. Obviously, the formulator wishes to add the right amount of binder and the right amount of powder to the mixer as too much binder would result in a paste, and too much powder would be too dry to stick together, and so agglomerates would not form. The addition of the powder and binder can be achieved by a single batch addition, or more commonly, by a step-wise addition, that is, first some powder followed by binder, or first some binder followed by powder.

Appellants have traversed the above rejections on essentially identical grounds, that is, that their precise order of addition of components is critical to achieving a controlled particle size in the inventive methods and thereby arriving at a high-bulk density detergent composition having a bulk density of 650 g/L or more. That specific order of addition is powder, followed by binder, followed by more powder. The examiner fully understands and respects this argument, however maintains the references provide ample teachings to add amounts of powder and binder as needed to arrive at a detergent granule having a bulk density of 760 g/L according to the examples in the references above.

Recall that Nitta et al teach binder followed by powder, but also teach that aluminosilicates may be added after the neutralization step and prior to the step of adding liquid components (page 8, paragraph 62). In this scenario, aluminosilicate could be added prior to the binder, followed by the binder and powder taught in the example, thus satisfying the present claim limitations.

Recall that Mort et al teach that zeolite free-flow aids, liquid binder, and as much as 10% additional detergent ingredients, such as aluminosilicates, may be added in the agglomeration steps.

The examiner maintains that adding components to a mixer as needed, that is, some powder followed by binder, and perhaps more powder or binder according to the needs of the formulator, rather than being a novel and therefore patentable process, is in fact commonly used and obvious to persons of ordinary skill in the art. One can readily imagine the formulator in the laboratory, wishing to make a high bulk density granule, trying various combinations of powder and binder to achieve a desired consistency. Such routine experimentation will doubtless include many separate additions of powder and binder to optimize the ingredients in order to achieve a granule with the desired properties. Should each addition of powder or binder be considered an inventive step and be given patentable weight? The examiner has no doubt that appellants have succeeded in making a superior detergent granule, but disagrees that the process of making that granule meets the test for being unobvious over the prior art.

With regard to step A of the present claims, and particularly the claim language "and beginning step (B) after a point of initiating formation of coarse grains in the neutralization mixture obtained during the course of neutralizing the liquid acid precursor", the examiner maintains that both references above contain a neutralizing step identical to step A of appellants, and the result of such a neutralization step will necessarily be the formation of appellant's so-called "coarse grains". That is, every neutralizing reaction performed in the art that mixes a liquid surfactant and neutralizing



powder (precisely what is claimed, and precisely what is taught by the references) will result in the formation of "coarse grains", and the agglomeration processes described in the prior art above all begin their agglomeration only after the neutralization process is complete, i.e. after the "coarse grains" have formed. The examiner therefore disagrees completely with appellants' arguments that this "after coarse grains have formed" limitation represents a critical timing of some sort. Rather, it is the natural result of the neutralization process.

Similarly, appellants refer to table 6 of Nitta et al to demonstrate that the zeolite of the reference is added after its neutralizing step, whereas in the present invention, a zeolite is added after a point of initiation of formation of coarse grains of the neutralization mixture obtained during a course of a neutralization process in step (A). Again, the examiner sees no difference whatsoever in the neutralization step of the prior art and the "formation of coarse grains" presently claimed.

Appellants have argued that the examiner's position that it is obvious to add powder and binder as needed is without basis for the reason that it is based on mere supposition and speculation. The examiner disagrees and maintains that the references above provide ample teaching that powders, binders, and if desired, additional powders may be added to formulate these compositions.

Appellants further argue that their specific order of addition results in granules with superior properties such as particle size, bulk density, flowability, and detergency. The examiner has no doubt that this is so, however, the prior art detergents in the

references above all have properties which, if they are not identical, certainly overlap these properties. Appellants have not provided any evidence of unexpected results when their detergent granules are compared to the detergent granules of the prior art. Indeed, by the examiner's analysis, the final product detergent granules of the present invention and the prior art are indistinguishable.

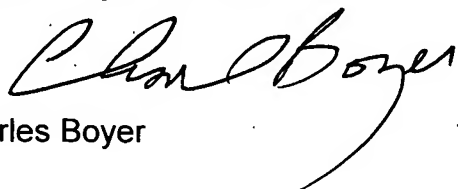
Finally, appellants argue that the references use an alkali aluminosilicate as surface modifiers after neutralization is carried out, whereas appellants use an alkali aluminosilicate to prevent formation of coarse grains in a neutralization mixture during the neutralization step, not during a surface modification step after neutralization. First, note that in step A of present claim 1, the claim specifically states that neutralization should be carried out "in the substantial absence of an alkali metal aluminosilicate", yet it is apparently acceptable to add aluminosilicate to this aluminosilicate-free neutralization mixture as long as the "coarse grains" have begun to form. Appellants have not given any guidance as to when this perfect moment of coarse grain formation might take place, or how to recognize a coarse grain once formed. In any event, as discussed above, the examiner does not draw a distinction between coarse grain formation and a normal neutralization process as taught in the prior art. Even if the zeolite of the references is added for a different reason than that envisioned by appellants, as the references above teach the addition of zeolites after neutralization, it does not matter why they are added. The fact remains the zeolite is present, and so this claim limitation is satisfied.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,




Charles Boyer

Conferees:



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SUPERVISORY PATENT EXAMINER  
1796



Ronaldo H. Delmendo  
Appeal Conference